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ABOUT US

2MBIO CO.,LTD have been operating in Korea since 2014. We are a leading manufacturer and distributor of crop protection and nutritional products for growers who are focused on Integrated Pest & Disease Management and improving the health of their soils.

2MBIO CO.,LTD continues to widen and improve its range through a focus on Research and Development. We rigorously test our products for consistency, safety and efficacy to maintain our reputation for quality products backed by a high level of technical support.

2MBIO CO.,LTD is focused on food production that supports bio-diversity and builds the fertility and stability of our ancient and fragile soils. We believe agroecology and restorative agricultural practices are the cornerstone of the continuing prosperity of Korean Agriculture and its image as a supplier of "Clean & Green" produce.

MISSION to support the expansion of ecologically focused food production within rural, peri-urban and urban communities through the production and supply of quality eco-friendly and Registered Organic nutritional and plant protection products.

> Kind Regards, Mary Namn Managing Director

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PRODUCT LIST

BIO INSECTICIDE

- 02 JINTTUK
- 04 PESTOP
- 07 BILLION
- 08 KKAKTTUK
- 10 BIOCOMBAT
- 12 EUNCHONGYEE

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Natural Pesticide



JINTTUK is broad spectrum of activity against pest insects

- ï The active ingredient of JINTTUK extracted from the plant Cymbopogon species
- i Novel, effective and ecofriendly tools
- $\ddot{\tau}$ Novel bioactive compounds endowed with multiple mode of action

Feature

- · Have nanoemulsion emulsifiable concentrate
- · Better efficacy towards pesticide delivery systme
- · Enhances some physicochemical properties, stability and bioavailability
- No risk to human health and environment
- No resistance, approved for organic use
- · Can be used right before harvest without concern for residue

Action Mechanism

- Deferrents for feeding
- · Elicit feeding deterrent anti-feeding
- Neurotoxicity(AchE inhibition, octopamin and Y-aminobutyric acid receptors blocking)
- Respiratory inhibition

Compatibility



Citronellal(A)



Citronellol(B)

· Can be mix used together all chemical pesticide, biopesticide, fertilizers

Insect	Target Crop	Dosage	Guide Application
Aphid, Mite Whitefly, Jassids Leaf-hopper, Pear sucker Tuta absoluta, Leaf hopper Brown Plant hopper Citrus flatid bopper	Horticultural crops : fruit tree vegetable Food crops : rice, maize, wheat, bean etc. Row crops : cotton, tea, cereals, Sunflower, groundnut		Prevention : Early stage of plant 14~20days interval spray
Leaf miner, Beetle, Spotted lanternfly Small green plant bug		1,000	Curative :
Bean bug Black rice bug		(1ml/1L) Foliar treatment	2time spray with 3~4days interval, subsequently 10~15days interval
Brown Winged green bug Yellow brown stink bug Southern Green Shield bug : 1 st ~5 th instar			2)High stage of insect appearance 3time spray with 3~4days interval, subsequently 2time spray 4~10days interval then payt spray
Thrip : 1 st and 2 nd instar Diamondback moth, : 1th~3rd instar			15days interval



Applicable Insect













Apple leaf curling aphid

Melon aphid

Green peach aphid

Pear sucker Striped flea beetle

Polished chafer







Leaf hopper

Citrus flatid hopper

Tuta absoluta







Black rice bug Spotted lanternfly Bean bug





Western Flower thrip







Palm thrip



■ Insecticidal activity Test





Treated





Daikon Leaf Beetle

Melon Aphid Green peach Aphid

Flower thrip

whitefly





🛃 Natural Pesticide

PESTOP



PESTOP is broad spectrum botanical insecticide

- $\ddot{\ }$ The active ingredient is extracted from the plant Neem seed kernels
- ï Botanical Insecticide concentrate
- $\ddot{\tau}$ Integrates easily with integrated pest management system : can be used in organic Farming

Feature

- Pestop has been applied to a wild range of crops in many countries and does not appear to be any significant negative impact on agriculture condition
- Pestop effective for over 600 species of pest
- Pestop is 100% bio degradable and environment friendly

Action Mechanism

- It reduce the level of the insect hormone Ecdysome by disrupting the insest's molting process
- · Antifeedant, growth reduction, increased mortality
- Abnormal and delayed moult and sterility effect.



Compatibility

Can be mix used together all chemical pesticide, biopesticide, fertilizers

Insect/ crop	Target Crop	Dosage	Guide Application
Oriental tobacco budworm Cotton bollworm Tobacco cutworm, tea totrix Beet armyworm, leafroller Cabbage Armyworm Cotton caterpillar	Horticultural crops : fruit tree vegetable Food crops : rice, maize, wheat, bean etc. Row crops	1,000 (1ml/1L) Foliar treatment	Prevention : Early stage of plant 14~20days interval spray
Aphid, Mite Whitefly, Jassids Leaf-hopper, Pear sucker Tuta absoluta, Leaf hopper Brown Plant hopper Citrus flatid hopper Leaf miner, Beetle, Spotted lanternfly Small green plant bug			Curative : 1)First stage of insect appearance 2time spray with 3~4days interval, subsequently 10~15days interval 2)High stage of insect appearance
Caterpillar	Sunflower, groundnut		3time spray with 3~4days interval, subsequently 2time spray 4~10days
Brown Winged green bug Yellow brown stink bug Southern Green Shield bug : 1 st ~5 th instar			interval then next spray 15days interval



Applicable Insect





















Cabbage armyworm Cotton caterpillar





Oriental tobacco budworm Cotton bollworm Tobacco cutworm





Beet armyworm

Fall armyworm



Rice leaf roller



Leaf miner



Broad mite

Gypsy moth



Insecticidal activity Test

Nontreated Treated Diamondback moth Beet armyworm Tobacco cutworm Cotton caterfillar Black cutworm

Trust & Collaboration 2MBIO 5

What is NEEM?



🐼 Natural Pesticide

Microbial insecticide

Billion has high concentrated endotoxin BT

i Contain high Concentrated delta-endotoxins and spore (2X10⁸ cfu/g)

Mode of action

- To lyse midgut epithelial cells by inserting into the target membrane and forming pores
- · Midgut cell disordered and decreased markedly, act on the plasmalemma and the organelle membrane



Insect	Target Crop	Dosage	Guide Application
Common cabbage worm Tea totrix, Leafroller	Vegetable crops		Prevention : Early stage of plant 14~20days interval spray
cotton caterpillar Hornworm larvae	 Fruiting crops apple, pear, citrus, mango, cherries, Stone friuit, nut Row crops cereals, sunflower, cotton, tea, groundnut 	2,000 (1g/2L) Foliar treatment	Curative : 1)First stage of insect appearance
Diamondback moth Armyworm larvae Egyptian cotton leaf worm			2time spray with 3~4days interval, subsequently 10~15days interval
Rice leaf roller Rice stem borer			2)High stage of insect appearance 3time spray with 3~4days interval, subsequently 2time spray 4~10days interval then next spray 15days interval



Army worm (corn field) Army worm (rice) Cotton leafworm Army worm

looper

Tabacco cutworm Tabacco cutworm

🛃 Natural Pesticide

KKAKTTUK

KKAKTTUK is broad spectrum of activity against pest insects

- ï The active ingredient of KKAKTTUK extracted from the plant Pongamia pinnata(Karanja tree)
- $\ddot{\tau}$ Novel, effective and ecofriendly tools
- $\ddot{\tau}$ Novel bioactive compounds endowed with multiple mode of action

Feature

- · Have nanoemulsion emulsifiable concentrate
- Better efficacy towards pesticide delivery systme
- · Enhances some physicochemical properties, stability and bioavailability
- No risk to human health and environment
- No resistance, approved for organic use
- Can be used right before harvest without concern for residue

Action Mechanism

- Interference with the octopaminergic system
- Elicit feeding deterrent anti-feeding
- Neurotoxicity(AchE inhibition, octopamin and Y-aminobutyric acid receptors blocking)
- Respiratory inhibition



· Can be mix used together all chemical pesticide, biopesticide, fertilizers

Insect	Target Crop	Dosage	Guide Application
Cottony cushion scale Arrow headed scale Soft brown scale Comstock mealybug Citrus mealybug Matsumoto mealybug Wax scale Sanhojae scale	Horticultural crops : fruit tree vegetable1,0 (1 ml Foliar tree trice, maize, wheat, bean etc.Food crops : rice, maize, wheat, bean etc.1,0 (1 ml Foliar tree Foliar treeRow crops : cotton, tea, cereals, Sunflower, groundnut1,0 (1 ml Foliar tree Foliar tree	1,000 (1 ml/1L) Foliar treatment	Prevention : Early stage of plant 14~20days interval spray
Aphid, Mite, Whitefly, Jassids Leaf-hopper, Pear sucker Tuta absoluta, Leaf hopper Brown Plant hopper Citrus flatid hopper Leaf miner, Beetle, Spotted lanternfly Small green plant bug			 Curative : 1)First stage of insect appearance 2time spray with 3~4days interval, subsequently 10~15days interval 2)High stage of insect appearance 3time spray with 3~4days interval,
Brown Winged green bug Yellow brown stink bug Southern Green Shield bug : 1 st ~5 th instar			subsequently 2time spray 4~10days interval then next spray 15days interval







KKAKTTUK

Applicable Insect



Insecticidal activity Test



■ Life cycle of Mealy bug



- Pupu

Natural Pesticide BIOCOMBAT

BIOCOMBAT is Natural Nematicide

- The active ingredient of BIOCOMBAT extracted from the plant Cinnamomum zeylanicum
- ï Novel, effective and ecofriendly tools
- ï Novel bioactive compounds endowed with multiple mode of action

Feature

- · Have nanoemulsion emulsifiable concentrate
- Better efficacy towards pesticide delivery systeme
- Enhances some physicochemical properties, stability and bioavailability
- No risk to human health and environment
- No resistance, approved for organic use
- Can be used right before harvest without concern for residue

Action Mechanism

- Contact poison, repellent effect
- Destroy the cell wall of nematode
- Make adverse soil condition to prevent female ontogeny



Can be mix used together all chemical pesticide, biopesticide, fertilizers

Dosage and method of Application

Insect/ crop	Dosage	Guide Application
Insect : Root knot nematode Root lesion nematode	1,000 (1ml/1L)	 1st application : before planting or after transplant planting, 15L/1ha, 2000 time 2nd application : 20days after planting 22.5L/1ha
Crop : Vegetable and Fruit	Soil drip irrigation	It is better to apply 20~25days interval regularly after 2 nd application













10 Trust & Collaboration 2MBIO





🛃 Natural Pesticide

EUNCHONGYEE ECOCERT

EUNCHONGYEE is broad spectrum of activity against pest insects

- The active ingredient of EUNCHONGYEE extracted from the plant Annona squamosa
- **i** Novel, effective and ecofriendly tools
- $\ddot{\imath}$ Novel bioactive compounds endowed with multiple mode of action

Feature

- Have nanoemulsion emulsifiable concentrate
- Better efficacy towards pesticide delivery systme
- · Enhances some physicochemical properties, stability and bioavailability
- · No risk to human health and environment
- No resistance, approved for organic use
- · Can be used right before harvest without concern for residue

Action Mechanism

- Interference with the octopaminergic system
- Elicit feeding deterrent anti-feeding
- Repellent
- Respiratory inhibition



Compatibility

· Can be mix used together all chemical pesticide, biopesticide, fertilizers

Insect	Target Crop	Dosage	Guide Application
Thrip Palm thrip Western flower thrip Garden thrip	Horticultural crops		Prevention : Early stage of plant 14~20days interval spray
Mite Two spotted mite Pink citrus rust mite Citrus red mite Broad mite Purple tea mite (Calacarus carinatus)	Food crops : rice, maize, wheat, bean etc. Row crops : cotton, tea, cereals.	1,000 (1ml/1L) Foliar treatment	 Curative : 1)First stage of insect appearance 2time spray with 3~4days interval, subsequently 10~15days interval 2)High stage of insect appearance 3time spray with 3~4days interval, subsequently 2time spray
Aphid Foxglove aphid oat aphid	Sunflower, groundnut		4~10days interval then next spray 15days interval

EUNCHONGYEE

■ Applicable Insect



Onion Thrip

Whitefly

Insecticidal activity Test



Life cycle of Thrip



Natural Fungicide FUNGUARD

FUNGUARD Natural Fungicide for IPM

- ï The active ingredients of are extracted from the botanical plant extract oil and antifungal metabolite of microorganism.
- ï Excellent control and protection against powdery mildew, downy mildew, gray mold, damping off etc.
- ï Nu tritious effect helps the plant grow healthy by plant extract
- ï P rovides better efficacy when spraying in conjunction with other protectant fungicides.

Mode of action

- Stimulation of phytoalexin and immunoreation in plant
- · Disrupting the cell wall formation of pathogenic fungi
- · Degrade cell of fungal pathogen completely or partially





Powdery Mildew

Dosage and method of Application

Disease	Dosage	Guide Application
		Prevention : Early stage of plant 14~20days interval spray
Powdery mildew Downy mildew Gray mold	1,000 (1ml/1L) Foliar treatment	 Curative : First stage of disease appearance time spray with 3~4days interval, subsequently 10~15days interval 2)High stage of disease appearance 3time spray with 3~4days interval, subsequently 2time spray 4~10days interval then next spray 15days interval



Cucumber Downy Mildew

Cucumber Powdery Mildew

Sesame Downy Mildew

C Natural PGR **GEAR-10**

GEAR-10 is Natural Plant Growth Regulator combination with PGPR Basillus sp. KR083

- ï GEAR-10 is a concentrate powder of plant extract and metabolite of microorganism
- ï GEAR-10 is an all natural biostimulant for soil organisms and plants
- ï GEAR-10 is by-products of a proprietary fermentation process which it has vitamins, enzymes and other powerful stimulators such as B-vitamins, triacontanol, glycosides and porphyrins.
- ï GEAR-10 has a natural hormone as like Auxin, Giberellin, Cytokinin derive from microbial metabolite

Mode of action

 Increase photosynthesis, energy-rich compounds produced in the leaves by vigorous metabolism



- Enhance plant defense response
- Helps plants overcome periods of stress caused, for example, by drought, water logging or root damage

Application Method

Crop	Appl./Timing	Rate(g/1ha)	Crop	Appl./Timing	Rate(g/1ha)
All Cereals Maiz	1 st / 2~5 leaf stage 1 st / 3~5 leaf	150~200g 70g	Spinach Carrot Lettuce	1 st / After transplanting 2 nd / 20~30% vegetable growth	100~150g
Cotton	1 st / 3~4 leaf 2 nd / Before flowering	200~250g	Pepper	1 st / After transplanting 2 nd / Before flowering	150~200g
Alfalfa	1 st / 3~4 leaf 2 nd / After 1st cutting 3 rd / After 2nd cutting 4 th / Further after each	100~150g	Apple, Pears Citrus, Mango Pawpaw, Pineapple	1 st / New growth beginning flowering 2 nd / 50% petal fall	
Tomato Cucumber Strawberry	1 st / After transplanting	300g		1 st / New growth beginning	
	2 nd / Before flowering	150g	Grape	flowering	
	3 rd / Every 4~6weeks	150g	Stone fruits	$3^{rd}/3~4$ weeks later	
	4 th / Every 4~6 weeks	150g		4 th / 3~4 weeks later	
Onion	$1^{st}/2\sim4$ leaves are visible $2^{nd}/20\sim30\%$ expected bulb $1^{st}/2\sim4$ leaves are visible $2^{nd}/20\sim30\%$ expected bulb	300g	Cherries Nuts, Olives	1 st / 30% petal fall 2 nd / Fruit start to grow	
Green bean	1 st / 3~4 leaf unfolded 2 nd / Before flowering	150~200g			



Treatment

Non Treatment

Root Development

Good Color

Big Yield

Size

O Gear-10 Performance

Tomato

25% increase yield, Prolong harvest time 2 month



Strawberry

Excellent root development, unit size harvest 30% increase, early start harvest 1month



Kiwi

Good flowering good size and yield



Treated

Nontreated

Citrus

Excellent Growth health, No alternate year bearing



Treated





Nontreated

Rice in India 50% increase shoot, yied increase 35%



Treated



Nontreated

Enhancer/Adjuvant EXCEL POWER-100

EXCEL POWER-100 is Power Quality Enhancer

EXP-100 is specially designed

ï To aid penetration and wetting of insecticides, fungicides, fertilizers, nutrients, and herbicides.ï F or fast spreading, uniform distribution and absorption of spray on leaf and stem surfaces.

EXP-100 may be used

ï With most pesticides and fertilizer products for high performance applications, **ï** P erfectly suited to meet varying requirements.

EXP-100 serve as carriers to deliver actives to plants or pests, fungal fungi.

ï Provide superior spray coverage, increase spray droplet drying time, prevent chemical degradation.ï P revent formation of insoluble complexes and cuticular penetration.

ï Can d ecrease the spray volume required for a particular pesticide application

ï Allow for better targeting, and increase pesticide up-take

Composition and properties

Product	Composition	Main field	Application rate
EXCEL POWER-100	Modifided polysiloxan, Trisiloxan Nonion surfactant, Stabilizing agent Humicants(Hygroscopic agent)	Whole crop	1~3 L/1ha

How do work ?

Increase Efficacy- help penetrate the leaf surface. Chemicals enter the foliage through 2 possible paths, the Lipophilic and Aqueous Pathways.

EXCEL POWER-100 can assist chemicals to penetrate foliage by both pathways.



Graymold In Tomato

Powdery Mildew On Rose

Diluent EXCEL POWER-100